

Substitute for form 1449/PTO

**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**  
(use as many sheets as necessary)

Sheet

1 of 4

**Complete if Known**

Application Number	09/869,990
Filing Date	January 14, 2000
First Named Inventor	Stuart L. Soled, et al.
Art Unit	1797
Examiner Name	John Christopher Douglas
Attorney Docket Number	JHT-0004
Family Number	P1997J057F

**U. S. PATENT DOCUMENTS**

Examiner Initials*	Cite No. <sup>1</sup>	Document Number Number-Kind Code <sup>2</sup> (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, columns, lines, where relevant passages or relevant figures appear
		US- 2,690,433	07/22/1952	W. F. Engel, et al.	
		US- 2,873,257	02/10/1959	E. A. Hunter, et al.	
		US- 2,946,738	07/26/1960	L. E. Gardner, et al.	
		US- 3,198,753	08/03/1965	F. Traina	
		US- 3,280,040	10/18/1966	J. Jaffe	
		US- 3,408,309	10/29/1968	A. W. Gessner	
		US- 3,520,796	07/14/1970	H. C. Murphy, Jr., et al.	
		US- 3,619,414	11/9/1969	Mills, et al.	
		US- 3,678,124	07/18/1972	Stepanov, et al.	
		US- 3,850,746	11/26/1974	Robson	
		US- 3,861,005	1/21/1975	Steinmetz et al.	
		US- 3,901,828	08/26/1975	Mai, et al.	
		US- 3,925,197	12/9/1975	Van Klinken, et al.	
		US- 3,959,179	05/25/1976	Mikovsky, et al.	
		US- 4,013,545	03/22/1977	Hilfman	
		US- 4,014,925	3/29/1977	Ferlazzo, et al.	
		US- 4,113,603	09/12/1978	Bauer	
		US- 4,113,605	09/12/1978	Mickelson	
		US- 4,153,578	05/08/1979	De Thomas, et al.	
		US- 4,181,602	01/01/1980	Quick, et al.	
		US- 4,388,223	06/14/1983	Ferlazzo, et al.	
		US- 4,392,945	07/12/1983	Howard, et al.	
		US- 4,491,639	01/01/1985	Happel, et al.	
		US- 4,596,785	6/24/1986	Toulhoat et al.	
		US- 4,701,381	10/20/1987	Jack	
		US- 4,720,477	01/19/1988	Hettinger, Jr.	
		US- 4,721,558	01/16/1988	Jacobson, et al.	
		US- 4,748,142	05/31/1988	Chianelli, et al.	
		US- 4,808,563	2/28/1989	Velenyi	
		US- 4,820,677	04/11/1989	Jacobson, et al.	
		US- 4,824,821	04/25/1989	Lopez, et al.	
		US- 4,857,496	08/15/1989	Lopez, et al.	
		US- 4,875,992	10/24/1989	Hamner	
		US- 4,973,397	11/27/1990	Ho	
		US- 5,112,472	05/12/1992	Gosselink, et al.	
		US- 5,122,258	6/16/1992	Eadie et al.	
		US- 5,244,858	09/14/1993	Usui, et al.	
		US- 5,252,199	10/12/1993	Singhal, et al.	

Examiner Signature	Date Considered
--------------------	-----------------

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. <sup>1</sup>Applicant's unique citation designation number (optional). <sup>2</sup>See Kinds Code of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup>Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup>For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup>Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. <sup>6</sup>Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

<p>Substitute for form 1449/PTO</p> <p><b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b></p> <p>(Use as many sheets as necessary)</p>				<b>Complete if Known</b>		
				Application Number	09/869,990	
				Filing Date	January 14, 2000	
				First Named Inventor	Stuart L. Soled, et al.	
				Art Unit	1797	
				Examiner Name	John Christopher Douglas	
Attorney Docket Number	JHT-0004					
Sheet	2	of	4	Family Number	P1997J057F	
	US-	5,292,428	03/08/1994	Harrison, et al.		
	US-	5,320,741	06/14/1994	Johnson, et al.		
	US-	5,446,004	08/29/1995	Tenten, et al.		
	US-	5,565,091	10/15/1996	Iino, et al.		
	US-	5,643,441	07/01/1997	Timken, et al.		
	US-	5,851,382	12/22/1998	Sudhakar		
	US-	5,865,988	02/02/1999	Collins, et al.		
	US-	5,897,768	4/27/1999	McVicker et al.		
	US-	5,968,346	10/19/1999	Jung, et al.		
	US-	5,993,643	11/30/1999	Chang, et al.		
	US-	6,002,919	12/14/1999	Posti		
	US-	6,013,598	1/11/2000	Lapinski et al.		
	US-	6,071,402	06/06/2000	Danot, et al.		
	US-	6,083,378	07/04/2000	Gildert, et al.		
	US-	6,156,694	12/05/2000	Harper		
	US-	6,156,695	12/5/2000	Soled et al.		
	US-	6,162,350	12/19/2000	Soled et al.		
	US-	6,162,351	12/19/2000	Sudhakar, et al.		
	US-	6,231,750	05/15/2001	Kasztelan, et al.		
	US-	6,231,753 B1	05/15/2001	McKnight, et al.		
	US-	6,299,760	1/9/2001	Soled et al.		
	US-	6,256,695 B1	07/03/2001	Williams		
	US-	6,582,590	6/24/2003	Riley et al.		
	US-	6,620,313	9/16/2003	Demmin et al.		
	US-	6,712,955	3/30/2004	Hou et al.		
	US-	6,755,963	6/29/2004	Haluska et al.		
	US-	6,758,963	7/6/2004	Hantzer et al.		
	US-	6,783,663	8/31/2004	Riley et al.		
	US-	2001/0000006 A1	03/15/2001	Kasztelan, et al.		
	US-	2003/0102254 A1	06/05/2003	Eijsbouts, et al.		
<b>FOREIGN PATENT DOCUMENTS</b>						
Examiner Initials*	Cite -No. <sup>1</sup>	Foreign Patent Document Country code <sup>3</sup> -Number <sup>4</sup> -Kind Code <sup>5</sup> (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of cited document	Pages, columns, lines, where relevant passages or relevant figures appear	T <sup>6</sup>
		EP 0183353 B1	27.09.85	Chianelli, R. R., et al.		
		EP 0203228 A1	03.12.86	Washecheck et al.		
		EP 0215989 A1	01.04.87	Ho et al.		
		EP 0244106 B1	09.04.87	Ward, J. W.		
		EP 0277718 A2	15.01.88	Vauk, D. A., et al.		
		EP 0379433 A1	18.01.90	Mazzocchia, C., et al.		
		EP 0419266 A1	27.03.91	Sawyer et al.		
		EP 0469675 B1	25.07.1991	Heinerman, J. J. L., et al.		
		EP 0590672 A1	30.09.93	Takito, T., et al.		
		EP0590673 A1	30.09.93	Takito, T., et al.		
		EP 0635555 A2	20.07.94	Tashiro, N., et al.		
		EP 0685260 A2	31.05.95	Kurimoto, I., et al.		
		EP 0849351 B1	12.12.1997	Cody, I. A., et al.		
		EP 0900929 B1	04.09.1998	Gourot, B		
		GB 1,282,950	2 Feb. 1970	P. Courty, et al.		
		GB 1,458,887	5 July 1974	Japan Synthetic Rubber Co		
		DE 3029266 C2	1.8.80	Becker, K., et al.		
		CN 1218088	02 June 1999	He, et al.	Abstract	

Substitute for form 1449/PTO				<b>Complete if Known</b>		
				Application Number	09/869,990	
				Filing Date	January 14, 2000	
				First Named Inventor	Stuart L. Soled, et al.	
				Art Unit	1797	
				Examiner Name	John Christopher Douglas	
				Attorney Docket Number	JHT-0004	
Sheet	3	of	4	Family Number		
	CZ 158758A			15 July 1975	R. Zidek, et al.	Abstract
	RU 2030444			10.03.95		
	PCT WO 00/41810			20 July 2000	Eijsbouts, S., et al.	
	PCT WO 00/41811			20 July 2000	Eijsbouts, S., et al.	
	PCT WO 00/42119			20 July 2000	Demmin, R. A., et al.	
	PCT WO 00/42125			20 July 2000	Riley, K. L., et al.	
	PCT WO 00/42131			20 July 2000	Hantzer, S. S., et al.	
	PCT WO 97/40120			30 October 1997	Lapinski et al.	
	PCT WO 99/03578			28 January 1999	Soled et al.	
	PCT WO 99/41327			19 August 1999	Cody, I. A., et al.	

Examiner Signature		Date Considered
-----------------------	--	--------------------

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.<sup>1</sup> Applicant's unique citation designation number (optional).<sup>2</sup> See Kinds Code of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup>Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup>For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup>Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. <sup>6</sup>Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: **Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

*If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.*

Substitute for form 1449/PTO				Complete if Known	
				Application Number	09/869,990
				Filing Date	January 14, 2000
				First Named Inventor	Stuart L. Soled, et al.
				Art Unit	1797
				Examiner Name	John Christopher Douglas
				Attorney Docket Number	JHT-0004
Sheet	4	of	4	Family Number	P1997J057F

## NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
	CA	Levin, Doron, et al., "Crystal Structure of an Ammonium Nickel Molybdate Prepared by Chemical Precipitation," <i>Inorganic Chemistry</i> , 1996, 35, pp. 4191-4197 (Sept. 1995).	
	CB	Mazzocchia, C., et al., "On the NiO MoO <sub>3</sub> mixed oxide correlation between preparative procedures thermal activation and catalytic properties," <i>Solid State Ionics</i> , 63-65 (1993) pp. 731-735.	
	CC	Astier, M.P., et al., "Nickel-molybdenum catalysts prepared by reduction of ammonium triammime tetranickel pentamolybdate," <i>Applied Catalysis</i> , 72 (1991) pp. 321-329.	
	CD	Olah, George A., <i>Hydrocarbon Chemistry</i> , 1995, p. 30	
	CE	Astier, M.P., et al., "Ammonium Triammime Tetranickel Pentamolybdate Preparation, Characterization and Crystal Structure," <i>Ann. Chem. Fr.</i> , 12, pp. 337-343 (1987).	
	CF	Astier, M.P., et al., "Solid State Chemistry," <i>C.R. Acad. Sc. Paris</i> , 304, (II), No. 11, pp. 563-566 (1987).	.
	CG	Mazzocchia, C., et al., "On the NiMoO <sub>4</sub> oxidative dehydrogenation of propane to propene: some physical correlations with the catalytic activity," <i>Catalysis Letters</i> 10 (1991) pp. 181-192.	
	CH	Levin, Doron, et al., "Chemie Douce Synthesis of a Layered Ammonium Zinc Molybdate," <i>Chem. Mater.</i> 1996, 8, pp. 836-843.	
	CI	M. Daage, et al., "Structure-Function Relations in Molybdenum Sulfide Catalysts: The "Rim-Edge" Model", <i>Journal of Catalysis</i> , 149, 414-427 (1994).	
	CJ		
	CK		
	CL		
	CM		
	CN		

Examiner Signature		Date Considered
--------------------	--	-----------------

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup>Applicant's unique citation designation number (optional). <sup>2</sup>Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.